

# QUARTZ CRYSTAL (INDUSTRIAL) STATISTICS

By Carl A. DiFrancesco and Thomas P. Dolley

[All values in metric tons (t) unless otherwise noted]

Last modification: March 24, 2003

Year	Production	Imports	Exports	Government shipments	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1932	0	0.17				0.17	507	6,040	
1933	0	4.13				4.1	242	3,030	
1934	0	3.73				3.7	664	8,080	
1935	0	3.25				3.3	531	6,320	
1936	0	10.3				10	934	10,900	
1937	0	14.9				15	4,170	47,200	
1938	0	25.5				26	5,690	65,800	
1939	0	30.4				30	4,560	53,500	
1940	0	57.4				57	4,610	53,700	
1941	0	760				760	4,980	55,200	
1942	0	1,100				1,100	8,130	81,300	
1943	2.71	1,520				1,500	7,500	70,800	
1944	1.78	961				960	11,600	107,000	
1945	0	603				600	10,300	93,600	
1946	0	98.2				98	23,700	198,000	
1947	0	120				120	14,800	108,000	
1948	0	556				560	7,570	51,100	
1949	0	139				140	10,500	71,900	
1950	0	109				110	7,190	48,600	
1951	0	382				380	5,350	33,400	
1952	0	476				480	6,050	37,100	
1953	0	508				510	4,410	26,900	
1954	0	278				280	75,500	458,000	
1955	0	318				320	39,700	242,000	
1956	0	236				240	39,700	238,000	
1957	0	195				200	39,700	231,000	
1958	1.67	122				120	40,800	231,000	
1959	1.76	200				200	40,800	228,000	
1960	2.08	307				310	40,800	224,000	454
1961	2.95	387				390	40,800	223,000	1,180
1962	5.90	147				150	40,800	221,000	907
1963	8.16	128				140	40,800	217,000	907
1964	13.6	120				130	40,800	215,000	907
1965	22.7	147				170	40,800	211,000	147
1966		120				160	40,800	205,000	2,120
1967	39.5	99.8				140	56,500	276,000	102
1968	30.4	130				160	56,900	267,000	102
1969	56.7	108			47.2	170	56,200	250,000	59.9
1970	59.4	42.6	130	47.6	42.2	24.6	76,900	323,000	75.8
1971	49.9	15.9	78.9	64.0	54.9	38.2	55,200	222,000	176
1972	72.6	29.5	67.6	104	43.5	150	56,700	221,000	177
1973	139	47.2	130	210	51.7	258	56,600	208,000	177
1974	240	176	136	186	116	237	56,700	187,000	181
1975	329	265	119	330	142	216	56,900	172,000	177
1976	385	4.54	293	88.9	132	195	142,000	407,000	181
1977	264	0	228	54.4	210	12.4	76,000	204,000	181
1978	149	0	0	35.8	131	264	106,000	265,000	363
1979	261	0	0	110	139	363	83,200	187,000	1,820
1980	343	0	141	0	65.3	276	494,000	977,000	1,910
1981	299	0	114	141	56.7	335	85,800	154,000	79.4
1982	217	0	83.5	7.26	55.3	142	189,000	319,000	90.7

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1983	193	0	49.0	1.81	40.8	160	121,000	198,000	272
1984	466	0	145	57.6	71.2	348	120,000	188,000	1,130
1985	258	0	111	38.1	101	155	216,000	327,000	454
1986	238	0	181	0	73.0	85.0	181,000	269,000	544
1987	381	0	266	0	72.0	116	174,000	250,000	
1988	389	0	232	0	51.0	178	167,000	230,000	363
1989	464	0	57.0	75.0	76.0	457	135,000	177,000	800
1990	441	0	39.0	170	98.0	550	82,100	102,000	423
1991	441	0	53.0	44.0	99.5	431	110,000	132,000	454
1992	407	6.00	15.0	89.0	201	386	92,000	107,000	778
1993	394	8.00	24.0	134	200	512	195,000	220,000	500
1994	294	19.0	38.0	96.0	200	371	248,000	273,000	544
1995	351	47.0	35.0	0	200	363	332,000	355,000	435
1996	327	42.0	89.0	0	200	280	440,000	457,000	435
1997	355	63.0	74.0	0	200	343	307,000	312,000	450
1998	185	47.0	63.0	0	200	169	277,000	277,000	
1999	355	26.0	90.0	0	200	128	307,000	300,000	450
2000	185	31.0	74.0	0	200	146	277,000	262,000	

## Quartz Crystal (Industrial) Worksheet Notes

### Data Sources

The sources of data for the quartz crystal (industrial) worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB), and Mineral Commodity Summaries (MCS) and its predecessor, Commodity Data Summaries (CDS). The years of publication and corresponding years of data coverage are listed in the References section. Blank cells in the worksheet indicate that data were not available or were withheld because they are proprietary.

### Production

U.S. quartz crystal (industrial) production data represent the combined production of natural and cultured quartz crystals. Data were from the MYB for the years 1932–65, 1967–71 and 1996–2000, and the CDS and the MCS for the years 1972–95. A blank cell in the worksheet indicates that datum was not available for the year 1966.

### Imports

Import data for natural and cultured quartz crystal were from the MYB for the years 1932–54, 1974–75, and 1997–2000 and the MCS and CDS for the years 1955–73 and 1976–96. Data for the years 1974–75 were for imports of raw and natural quartz crystal valued at \$0.50, or more, per lb (current dollars), and overestimates imports as it includes both electronic-grade and the lower grade lascas material. Data for the years 1977–89 were reported as less than one-half unit and appear as zeros due to rounding down.

### Exports

Export data for natural and cultured quartz crystal were from the MCS and CDS for the years 1970–96 and from the MYB for the years 1997–2000. Blank cells in the worksheet indicate that data were not available for the years 1932–69.

### Government Shipments

Data were for shipments of natural quartz crystal from the U.S. Government stockpile and were from the MCS and CDS. Blank cells in the worksheet indicate that data were not available for the years 1932–69.

### Stocks

Data reporting the amounts amount of natural and cultured quartz held in industry stocks were from the MCS and CDS. Blank cells in the worksheet indicate that data were not available for the years 1932–68.

### Apparent Consumption

Data for U.S. apparent consumption are for natural and cultured quartz crystal. Apparent consumption was estimated for the years 1932–65, 1967–73, and 1976–96 by using the formula:

$$\text{APPARENT CONSUMPTION} = \text{PRODUCTION} + \text{IMPORTS} - \text{EXPORTS} \pm \text{STOCK CHANGES} \pm \text{GOVERNMENT SHIPMENTS}.$$

No export, government shipment, or stock data were available for the years 1932–65 and 1967–68 and were assumed to be zero when apparent consumption was calculated. No production, export, government shipment, or stock data were available for the year 1966. Apparent consumption datum was estimated for that year by interpolation. No export, government shipment, or stock change data were available for the year 1969 and were assumed to be zero when apparent consumption was calculated. Apparent consumption data for the years 1974–75 were estimated by interpolation. Apparent consumption data was from the MYB for the years 1997–2000. For the years 1932–69, apparent consumption was calculated to two significant numbers because of limited data.

### Unit Value (\$/t)

Unit value is the value in dollars of 1 metric ton (t) of quartz crystal (industrial) apparent consumption. Unit value was estimated for the United States in actual dollars for 1932–2000. The unit value (\$/t) was calculated by taking the weight average (using apparent consumption) of the price/average value for both natural and cultured quartz crystal from the MYB for the years 1932–61 and the MCS and the CDS for the years 1962–2000.

### Unit Value (98\$/t)

The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars.

### World Production

Data for mine production were from the MCS and CDS. Blank cells in the worksheet indicate that data were not available for the years 1932–59, 1987, 1998, and 2000. Datum for 1966 does not include U.S. production.

**References**

U.S. Bureau of Mines, 1933–75, Minerals Yearbook, 1932–77.  
U.S. Bureau of Mines, 1962–77, Commodity Data Summaries, 1962–77.  
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